



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

MacFarlane retired from the service of the Hudson's Bay Company in 1894, and spent practically all the remainder of his life in Winnipeg, Manitoba. Fur traders have seldom engaged in any regular and definite occupation after retirement, and MacFarlane was no exception to the rule. He retained his interest in the affairs of the Dominion and the world generally, however, and read eagerly and widely. Always interested in the natural history work of others, especially in expeditions to the scenes of his early labors, he was ready to assist in any way to further such plans. He remained active until a short time before his death, retaining in his old age, to a remarkable degree, that keenness of mind and vigor of body which had enabled him to accomplish so much, both as a fur trader and traveler, and as a zoological collector.

Biological Survey, U. S. Department Agriculture, Washington, D. C.



ADVENTURES IN BIRD-BANDING IN 1921.

BY S. PRENTISS BALDWIN

BIRD-BANDING seems, at last, to be coming into its own, since its recognition by the U. S. Biological Survey, and the widespread publicity given to this method of bird study during the last two years. During 1921, three hundred lovers of birds in all parts of the United States and Canada have taken out permits to begin this work; and within the month an additional three hundred or more, from Canada and New England alone, have gathered in Boston to organize the New England Bird-banding Association. The purpose of this organization is to cooperate with the Survey in establishing lines of trapping stations in New England, and by occasional meetings to compare notes and promote bird-banding.

It is because there are so many who are taking up the work anew that the writer will not attempt in this paper to compile scientific data bearing upon one or another phase of bird life, but will instead try to suggest, and illustrate by the data, different methods that may be employed in obtaining the facts.

The bird-bander will save much time, by first reading not only the History and Purpose of Bird banding, by Mr. Frederick C.

Lincoln (*Auk*, April 1921, Page 217) but by reading also the papers therein referred to. This means not only to study the papers published in the last two years, but to go back to 'The Auk' of 1909 and 1910, and learn that Dr. Leon J. Cole then suggested many of the facts which are only now being proved by these methods.

After seven years of very active bird banding the writer more and more appreciates the foundations laid for bird banding by Dr. Cole, Mr. P. A. Taverner, and Dr. Paul Bartsch, and the years of patient work by Mr. Howard H. Cleaves. The fact is that one does not know what to look for, or what small items may be overlooked and omitted from the notes, items which may be of greatest value. The writer's early notes lack much in value through failure to record certain facts; and years of trapping of House Wrens seem almost wasted because of not knowing until this year how to distinguish the sex of the living birds at a few feet distance.

The bird bander will soon see that two distinct purposes are accomplished in his work. The one is a national purpose, primarily the study of migration of birds, in which each bird bander contributes only his proportionate part to a great mass of information which will accumulate in Washington, and the result be obtained by the co-ordination of the work of all observers. The other purpose is the gathering of most interesting local and domestic details of the daily lives of the birds; matter which cannot be handled from Washington, but which must be worked up for the scientific world by the bird bander himself. No one who takes up this work need feel that by filing his data with the Biological Survey, he is to lose any of the value of it for his own purposes, or for publication over his own name.

Since the question is still sometimes asked, whether bird banding methods are cruel or harmful to the birds it is best to explain that every banding station becomes in fact a bird sanctuary, where food and shelter may be obtained, as well as safety from natural enemies. After seven years of bird banding by the writer on his farm near Cleveland, a prominent ornithologist, upon visiting the farm, said that these few acres had more birds per acre than any place he had ever seen.

So few have been the serious accidents to birds in my traps, or in handling of thousands of birds each year, that I can remember every fatality that has occurred in the seven years experience; such accidents have not averaged two in a year; less than one accident to the thousand birds handled. One of the joys in this work is that the ornithologist may handle for scientific study great numbers of birds in live healthy condition, in normal colors, not affected by the changes which take place so quickly after death, and study normal measurements, and natural attitudes, and individual characteristics, and all without destruction of life. And against my, possible, dozen accidents may be credited the saving of hundreds, yes, actually hundreds of lives of birds on my farm by my care of them.

One form of slight injury does occur with some species of birds in certain forms of traps; and the bird bander may expect it, and not be distrubed about it. Birds remaining in the trap for a time and repeatedly pushing the head through the wires, often scratch the base of the bill; sometimes so severely as to give the head a bloody appearance. This injury is more apparent than real, and when the bird is taken again in a day or two the head is quite healed. I have never known one of my birds to suffer weakness or death from this cause. This form of injury can be prevented by making the trap with wire netting of much smaller mesh; or on the government sparrow trap use a band of copper mosquito mesh netting around the back of the trap: a band four inches high about the back of the trap will mostly prevent the birds pushing their heads through.

In looking over the following pages in which the adventures of one bird bander in one season are chronicled, bear in mind that the writer is a business man, who can give only part of his time to this avocation; and may we hope that from now on several hundred bird banders will each be securing during each season, much more information than the writer has been able to gather.

BANDING AT THOMASVILLE, GEORGIA, DURING
FEBRUARY AND MARCH, 1921.

PERCENTAGE OF RETURNS:

It is necessary to state the number of birds banded in previous seasons, as that, of course, determines the possibilities of returns

in this season, and in the table a wide gap will be noticed, caused by the writer's absence from Thomasville in the two seasons 1918 and 1919. This explains the fact that very few "returns" were taken this year from the years previous to 1920.

Previously Banded:

1915	Resident birds	27	Migrants	63	Total	90
1916	"	44	"	169	"	213
1917	"	24	"	215	"	239
1918	"	0	"	0	"	0
1919	"	0	"	0	"	0
1920	"	51	"	232	"	283
		<hr/>		<hr/>		<hr/>
		146		679		825

Some idea of the returns to be expected may be shown by the following figures:

Of the 90 birds banded in 1915, 17 birds, or 19 per cent., have been taken in subsequent years.

Of the 213 birds banded in 1916, 31 birds, or 15 per cent., have been taken in subsequent years.

Of the 239 birds banded in 1917, 12 birds, or 5 per cent., have been taken in subsequent years.

This decreasing percentage of birds re-taken is due to the break in the trapping during 1918 to 1919; but the high rate of returns will be seen in the taking of so many of the 1917 birds even after so long an absence.

In 1921 there were taken 20 birds, or 7 per cent., of those banded in 1920; 5 birds from 1917, and 3 birds from so long ago as 1916.

In 1921 in six weeks of February and March, 1040 birds were handled, 347 new birds, 28 from previous years, and 665 "repeats" meaning by that recaptures of birds already handled one or more times during the season.

It is surprising how constant this last number is, year after year, two-thirds of all birds caught being birds that have been in the traps before.

Of the 28 birds taken from previous years 14 were residents, from the possible 146 previously banded; 14 were migrants, from the possible 679 previously banded; considering the long travel, and many risks of migrant birds through the year, as well as the

possibility of their not returning to exactly the same spot for the winter, we may be surprised not that the proportion of permanent residents retaken is greater, but that so many migrants are taken.

This designation of certain species as residents must be taken only as a convenient classification, but as no trapping is done here at other times of the year there is no proof that these individuals do actually remain here all the year.

RECORDS OF SOME SUPPOSED RESIDENT BIRDS:

Among these "resident" records a few, especially the records of the Blue Jays, begin to give some idea of how long birds may live, under natural conditions.

No. 1916. Blue Jay (*Cyanocitta cristata cristata*)

1916. Banded March 28 at Station A

1920. Taken February 15 at Station A

1921. Taken March 6 at Station AA

As this bird was at least one year old when banded, it is now at least six years old, and each year is taken at exactly the same spot, Station AA, being just on the other side of the house from A.

No. 3177 (*). Blue Jay (*Cyanocitta cristata cristata*)

1916. Banded in March

1921. Taken March 26 at Station C

Another bird that is now at least six years old. This bird is either 31775 or 31777, the last figure is completely worn away, being on the under side of the tarsus, and this bird evidently has an unusual habit of squatting as it feeds on the ground.

No. 31772 was taken in 1920 and the last figure was then quite distinct, so this is not likely 31772.

No. 1929. Blue Jay (*Cyanocitta cristata cristata*)

1917. Banded February 17 and taken also March 11 at A, March 14 at A, and March 16 at A.

1921. In January found dead near Station D, about 300 yards from where it was banded in 1917.

This bird was at least five years old.

No. 41897. Blue Jay (*Cyanocitta cristata cristata*)

1917. Banded March 12 at Station B.

1920. Taken February 27 at Station C, and March 3 at Station A.

1921. Taken March 11 at Station A.

These stations A, B and C are within 200 yards of each other, so the appearance at these different stations does not imply much wandering. This bird is another which is at least five years old.

No. 53075. Blue Jay (*Cyanocitta cristata cristata*)

1920. Banded February 16 at Station AA.

1921. Taken March 28 at Station D.

Very few bands on birds I have retaken have shown much wear, but on this band the figure 7 is worn so that it looks like a figure 1.

No. 53080. Blue Jay (*Cyanocitta cristata cristata*)

1920. Banded February 16 at Station AA and taken also March 2 at C, March 8 at AA, March 23 at A.

1921. Taken March 30 at AA.

No. 53092. Brown Thrasher (*Toxostoma rufum*)

1920. Banded February 29 at Station B and taken March 21 at B with 40796.

1921. Taken March 29 at B.

No. 53093. Brown Thrasher (*Toxostoma rufum*)

1920. Banded March 10 at Station A, and taken March 14 at A.

1921. Taken February 23 at A and March 17 at A.

No. 19247. Among the residents I missed this famous Brown Thrasher of so much history since 1915 and I fear the bird has died. (See 'Auk,' April 1921, page 234.)

No. 53086. Mocking Bird (*Mimus polyglottos polyglottos*)

1920. Banded Feb. 19 at Station D and taken Feb. 28 at D, March 1 at D, March 7 at D, March 8 at D, March 10 at D twice, March 11 at D.

1921. Taken Feb. 22 at D.

This bird evidently lives near Station D, the last of the line of traps, and about 300 yards from A.

No. 53069. Red Bellied Woodpecker (*Centurus carolinus*)

1920. Banded February 15 at Station B.

1921. Taken February 25 at A and March 3 at A.

No. 41898. Cardinal, female, (*Cardinalis cardinalis cardinalis*)

1917. Banded March 12 at Station B.

1921. Taken March 28 at Station D.

A bird at least five years old. This is the oldest Cardinal in my records.

No. 53077. Cardinal, male, (*Cardinalis cardinalis cardinalis*)

1920. Banded Feb. 16 at Station A.

1921. Taken March 22 at Station D; the band was pinched tight on the leg; it was loosened and fixed so that he can not bend it again.

No. 53089. Cardinal, male, (*Cardinalis cardinalis cardinalis*)

1920. Banded February 20 at Station C and taken 2 at C.

1921. Taken March 23 at D, band pinched tight, and loosened.

No. 53094. Cardinal, male, (*Cardinalis cardinalis cardinalis*)

1920. Banded March 13 at Station A, and taken March 22 at C.

1921. Taken March 19 at Station C, band pinched tight, but leg not injured, so I replaced the band.

MIGRANTS:

Among the migrants, the White-throated Sparrows make up the most interesting group, and I have long ago decided that this is a definite neighborhood group, coming here each winter, since I first found them in 1915, always at Station A, which is, in fact, under my bed room window, in the shrubs about the base of the house. I have not in any year failed to take one or more birds of this group, from previous years, and this year one good old friend appeared to tie up with the past.

No. 38160. White-throated Sparrow (*Zonotrichia albicollis*)

1916. Banded March 5 at Station A, taken March 6 at A, March 7 A, March 16 at A.

1917. Taken March 7 at A, March 19 at A.

1920. Taken February 25 at A, Feb. 27 at A, March 2 at A, Mar. 3 at A, Mar. 6 at A, Mar. 22 at A.

1921. Taken March 17 at A, Mar. 23 at A, Mar. 25 at A, Mar. 27 at A.

This bird is now at least six years old, and has made five trips to Canada and return since being banded; or if not to Canada, at least to northern New York or New England. ('Auk,' April 1921, page 236.)

No. 45405. White-throated Sparrow (*Zonotrichia albicollis*)

1920. Banded February 19 at Station A, taken March 7 at A.

1921. Taken March 25 at A, Mar. 26 at A and Mar. 28 at A.

A sad accident happened to this bird; on March 26, his left foot was broken, snapped apparently in the trap in a rush into a corner with six others; I did not know how to mend it and decided to cut it off; when taken again, on March 28, the bird seemed as lively and healthy as ever. This is one of the, perhaps, half dozen accidents that have occurred to my birds in as many years, and in handling many thousands.

I had an interesting experience this season in trying to get these White-throats at Station A. The trap was placed in an open rose bed about fifty feet from my window, and day after day the White-throats would

gather about the trap but would not go in; it seemed I could not get them, and I must have them in order to connect this year's group with other years; after two weeks of this I wrote, in a hurry, for some nets, and placed one net just where this trap had been; placing the trap among the shrubs close under my window. To my surprise the White-throats began to go freely into the trap in its new location, only fifty feet distant but in more dense shrubbery, so that I banded many of them. This slight change of location made all the difference.

Among migrants the Myrtle Warblers are interesting as they, like the White-throated Sparrows, go nearly or quite to Canada for the summer.

No. 27290. Myrtle Warbler (*Dendroica coronata*)

1917. Banded February 28 at Station C.

1920. Taken March 7 at Station C, and March 11 at D.

1921. Taken March 1 at Station D, and March 3 at Station B, and March 17 at C.

This little bird is now at least five years old and has made four trips to the north and return since receiving its band.

No. 45433. Myrtle Warbler (*Dendroica coronata*)

1920. Banded March 8 at Station AA, taken March 9 at AA, Mar. 10 at AA, Mar. 12 at AA and Mar. 15 at A.

1921. Taken February 21 at A, Feb. 23 at AA, Feb. 24 at C, Feb. 26 at AA.

No. 45478. Myrtle Warbler (*Dendroica coronata*)

1920. Banded March 12 at D, Mar. 14 at A, Mar. 18 at C.

1921. Taken February 22 at B, Feb. 23 at B and C, Feb. 24 at C twice, Feb. 25 at D and C, Feb. 26 at C, Feb. 27 at C, Feb. 28 at AA and B, March 1 at C twice, Mar. 2 at C and B, Mar. 3 at C and D, Mar. 4 at C, Mar. 5 at C.

No. 45493. Myrtle Warbler (*Dendroica coronata*)

1920. Banded March 13 at B.

1921. Taken February 21 at C, Feb. 25 at D.

Both Myrtle Warblers and Chipping Sparrows easily form the trap habit, and feed at or in the traps most of the time; I have even had them leave my hand and go straight to the next trap and into it, by the time I reached it in making my rounds.

Last year, after my absence, and having taken two Myrtle Warblers of 1917, I was much disappointed not to get even one of the 266 Chipping Sparrows banded in 1915 to 1917. But this year one did return to me, a four year bird.

No. 38839. Chipping Sparrow (*Spizella passerina passerina*)

1917. Banded March 26 at Station C, taken Mar. 27 at D.

1921. Taken March 24 at AA station.

This bird now five years old, winters farther south and comes up through here in March en route to the north.

No. 45448. Chipping Sparrow (*Spizella passerina passerina*)

1920. Banded March 10 at Station D, taken March 14 at B, Mar. 16 at C, Mar. 20 at B, Mar. 24 at B.

1921. Taken February 28 at C, March 11 at C, Mar. 23 at D, Mar. 28 at D, Mar. 30 at D; claw off middle toe left foot and claw off middle and hind toe right foot.

No. 45484. Chipping Sparrow (*Spizella passerina passerina*)

1920. Banded March 13 at Station A, taken Mar. 24 at C.

1921. Taken March 27 at Station C, Mar. 28 at C.

No. 45822. Chipping Sparrow (*Spizella passerina passerina*)

1920. Banded March 14 at B station, taken Mar. 17 at A.

1921. Taken February 26 at A, March 1 at C, Mar. 2 at B, Mar. 3 at D and AA, Mar. 4 at AA, Mar. 7 at B, right foot, diseased; Mar. 8 at C, Mar. 10 at C and A, Mar. 11 at C, Mar. 12 at B, Mar. 14 at AA.

No. 45876. Chipping Sparrow (*Spizella passerina passerina*)

1920. Banded March 19 at Station C.

1921. Taken March 19 at Station C.

No. 45881. Chipping Sparrow (*Spizella passerina passerina*)

1920. Banded March 20 at Station C, taken March 21 at B, Mar. 23 at C, Mar. 24 at D and B.

1921. Taken March 15 at Station C.

No. 45887. Chipping Sparrow (*Spizella passerina passerina*)

1920. Banded March 20 at D, taken Mar. 22 at D.

1921. Taken March 1 at D, Mar. 3 at C, Mar. 4 at C, Mar. 6 at D and B, Mar. 7 at C and B, Mar. 10 at B, Mar. 12 at C, Mar. 13 at D, Mar. 14 at B.

No. 45924. Chipping Sparrow (*Spizella passerina passerina*)

1920. Banded March 23 at AA, taken Mar. 24 at AA, and marked "one claw gone from right foot." Squealer.

1921. Taken March 3 at B and D, 25 at D. The

fact that I had recorded "all claws good" at the time of the 1921 capture and that Mr. L. R. Talbot who is acting for me this year has again caught the bird and finds the claws missing as in 1920, shows how easily one may err in observation.

DISEASED FEET OF CHIPPING SPARROWS:

About the same number, nearly ten per cent., of Chipping Sparrows were found this year with diseased claws. And this again illustrates the need of the observer making careful note of every unusual condition, for after several years I find myself making no progress in the real story of these diseased claws; it is now evident that by making careful note of the condition of each toe, on a diseased bird, every time it is taken, it will soon be possible to know something of how rapidly the disease changes or spreads, and to what degree the claws recover.

EYE COLOR OF TOWHEE:

This season for the first time I have observed carefully the eye color of the Towhees handled, and find all shades from very pale yellow, orange, to orange red and deep red. I had supposed these Towhees to be of the subspecies "*alleni*." I offer no explanation of the many shades of eye color as others are much better qualified to explain it.

The season of migration was very early, as was also the vegetation. The Myrtle Warblers were abundant in February but had nearly all gone, northward I suppose, by March first; while great numbers of Chipping Sparrows arrived by March first, a week or more ahead of the time they usually appear.

BIRD BANDING AT CLEVELAND, 1921

The season of banding at the farm near Cleveland was really divided into two parts; the nesting season from May 7 to August 7; and the fall migration from September 7 to October 31.

During the nesting season, the birds nesting nearby come frequently into the traps, and bring their young as soon as they are out of the nest; the traps are very closely watched at this time so not to keep setting birds from their nests.

Of the 275 new birds banded 83 were House Wrens, old or young, taken in the nest boxes.

Then during September and October 230 new birds were banded from traps, mostly Sparrows—Song, White-throated and White-crowned, and Juncos. The following “returns” were taken:

- No. 53034. Catbird: (*Dumetella carolinensis*)
 1919. Banded May 15 at Station B.
 1921. Taken May 19 at A with 53913, June 9 at A, 16 at AB.
- No. 53913. Catbird (*Dumetella carolinensis*)
 1920. Banded June 4 at Station A, taken August 1st at C, with young 53931, taken August 2 at B.
 1921. Taken May 15 at B with 52319.
 May 18 with 53034 at A (53034 a 1919 bird).
 Did one of these become the mate of 53913?
- No. 29465. Catbird (*Dumetella carolinensis*)
 1920. Banded June 22 at Station B.
 1921. Taken May 15 at A with 52322 and 52323 Sept. 24 at B.
- No. 53925. Thrasher (*Toxostoma rufum*)
 1920. Banded July 4 at Station B, taken July 5 at A.
 1921. Taken May 15 at Station B.
- No. 38461. Chimney Swift: (*Chaetura pelagica*)
 1916. June 6 down north chimney
 1917. June 12 “ “ “
 1921. June 9 “ “ “ with 21214.
 Sept. 8 down south chimney.
 21214 no doubt a mate, as both birds were adults and the north chimney contained one nest with 5 eggs and a banded bird setting, no doubt one of this pair. (Proceedings Linnaean Society, N. Y., 1919, page 53.)
- No. 45947. Bluebird, male (*Sialia sialis sialis*)
 1920. Banded June 7, mate of 45934 on lawn.
 1921. June 2, Mate in Box 56, female, new, received band number 48791; three young 48792 to 48794.
- No. 45941. Bluebird, female (*Sialia sialis sialis*)
 1920. Banded June 6, mate of 45942 in orchard.
 1921. July 7 Mate in Box 13, male, new, received band number 21287, two young 21284 and 21285.
- No. 45348. Song Sparrow (*Melospiza melodia melodia*)
 1919. Banded July 3 at B, marked “young,” July 11 at B.
 1921. Taken May 17 at A-B.

- No. 46044. Song Sparrow (*Melospiza melodia melodia*)
1920. Banded July 25 at B, taken Aug. 6 at A, Oct. 2 at E.
1921. Taken May 14 at A with 48763 adult, possibly mate; May 17 at A, June 4 at A, June 5 at A, June 12 at A, June 16 at A, with 21226 young, and 21233 adult; June 19 with 21261 young, and June 19 at A with 21226 young; and June 20 at A with 21229, young.
- It is probable that these young birds are the brood of 46044 and is 21233 the other parent? Perhaps we may know, if they appear together in the trap next year.
- No. 46731. Song Sparrow (*Melospiza melodia melodia*)
1920. Banded Sept. 18 at Station B.
1921. Taken June 4 at B.
- No. 46047. Song Sparrow (*Melospiza melodia melodia*)
1920. Banded July 25 Station B, Aug. 2 at B.
1921. Taken June 15 at A B.
- No. 45989. Song Sparrow (*Melospiza melodia melodia*)
1920. Banded July 5 at B, taken June 14 at B.
1921. Taken July 7, band tight on the leg, changed band to 21282, leg not injured.
- No. 46829. Chipping Sparrow (*Spizella passerina passerina*)
1920. Banded Oct. 14 at D.
1921. Taken July 31 at A B.

Still bearing in mind the purpose of this paper, to suggest to bird banders ways in which this method may be useful in the study of the domestic life of the birds, the following incidents may be interesting.

RATE OF GAIN IN WEIGHT OF YOUNG BIRDS:

Robin (*Planesticus migratorius migratorius*)

In a nest on my porch two young birds were hatched May 28, 1921, and a third hatched on May 29. This young bird, being a day late, was smaller than the first two, and it seemed of interest to weigh the three birds and note rate of gain; as one might expect the larger ones to grab all the food and the little one to waste away. They were given bands and the weighing began on May 30 when No. 55246 and 55247 were two days hatched, and No. 55248 only one day hatched.

	Weight in Grams			Daily Increase in		
	No.	No.	No.	Weight		
	55246	55247	55248	55246	55247	55248
May 30.....	261	271	129			
" 31.....	373	388	147	112	117	18
June 1.....	520	520	246	147	132	99
" 2.....	676	644	393	156	124	147
" 3.....	726	698	465	50	54	72
" 4.....	793	730	579	67	32	114
" 5.....	835	761	711	42	31	132
" 6.....	848	783	778	13	22	67
" 7.....	827	793	805	-20	10	27

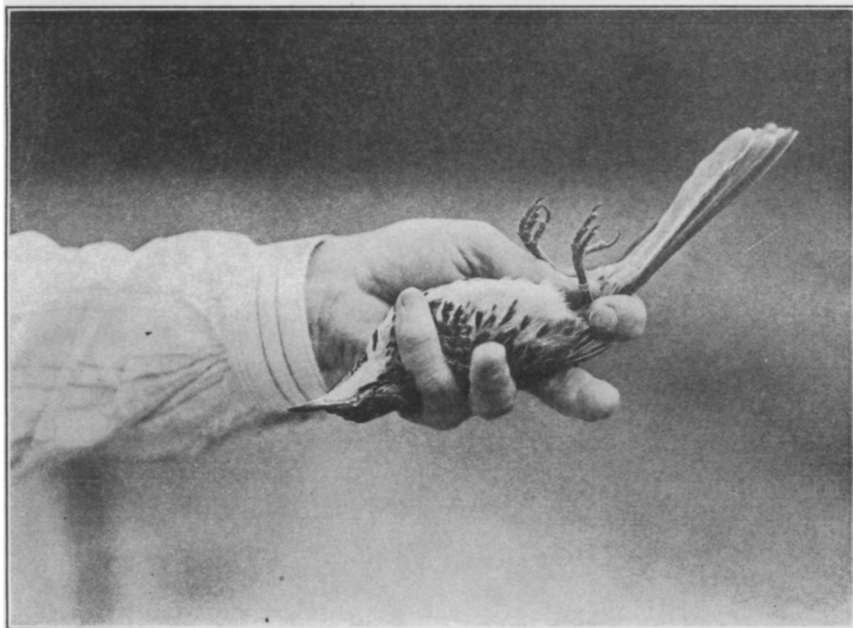
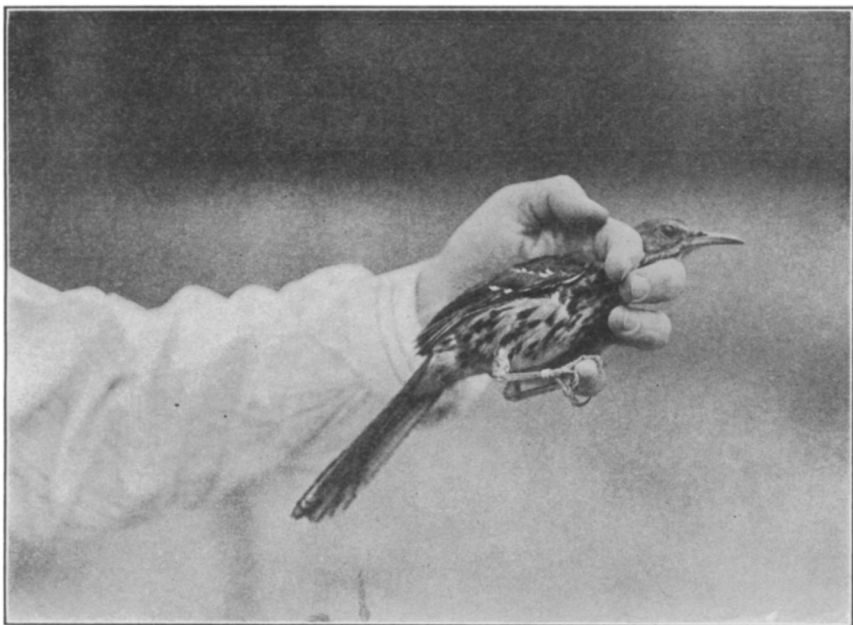
The birds were not weighed after June 7 because they were then ready to hop off the nest, having developed the sense of fear; though, being no longer disturbed, they remained in the nest until June 10 when the three came off the nest the same day.

It will be seen that the two larger birds gained rapidly during the first five days, then when the feathers began rapid growth the daily gain of weight was much less. The smaller bird made increasing gains in weight until, two days later than the larger birds, it began making feathers rapidly, but by that time it had about caught up in weight. When they all came off nest on June 10 no great difference in feathering could be noticed at the distance of about 20 feet.

MALNOURISHED CHILDREN AND HOUSE WRENS:

One of the writer's hobbies happens to be a charity, establishing nutrition clinics for the correction of malnourishment in children. It is not necessary to dwell upon the subject here except to say that among all children, all over the country, practically one-third are found to be malnourished; and these grow up to be the weak, inefficient adults, as found in the army tests during the war; and as are found in various industries. This is not due to poverty nor to lack of food, but nearly always to other causes, physical defects, poisoning tonsils, bad health habits, home conditions, or many other reasons.

I explain this because I weighed and photographed each day the fine healthy brood of House Wrens in Box 59. Then in Box 53 a pair of Wrens (21264 and 21234) lost by accident all their



PHOTOGRAPHS FROM S. PRENTISS BALDWIN.

HANDLING A BIRD IN BANDING.

brood, except one young bird, and here I thought I could see how fast a youngster can grow with the entire attention of his two parents. Imagine my surprise to find that day by day this bird was one third behind the average weight of the brood in Box 59 for the corresponding day; he was in fact malnourished, and just as we find among children, it was not lack of food; in this case it was *lice* and after a dose of poultry lice killer on the 12th day, he made some gain. Compare the weights in grains as follows:

Day from Hatching	Healthy Bird		Malnourished Bird	
	Weight	Gain	Weight	Gain
2	30
3	41	11
4	67	26	55	..
5	89	22	77	22
6	108	19	72	5 (loss)
7	120	12	83	11
11	159	39	100	17
12	161 ¹	2	103	3
13	161	0	114	11
14	.. ²	..	125	9
15	120 ³	5 (loss)
16	flew		124	4
17	flew		flew ⁴	

EXPLANATION OF PLATES

From Photographs furnished by S. Prentiss Baldwin.

Plate VIII, FIG. 1. HOLDING A BIRD FOR EXAMINATION. Pass the first two fingers over the bird's neck, holding the fingers closely enough so the neck is plainly felt between the fingers; the bird will rest quietly upon finding itself thus firmly held so that it can not push forward nor backward; and it will be more content if it is allowed to close the feet upon the little finger. It becomes very natural to slip the fingers over the neck of the bird, as one removes it from the gathering box.

PLATE VIII, FIG. 2. HOLDING A BIRD FOR BANDING. Draw the bird through the hand with the head in position to close the little finger on the neck to hold firmly; the thumb and forefinger are thus in correct position to hold the leg firmly while placing the band.

Do not grasp a wild bird about the body, as one may injure the bird in trying to prevent escape, when the bird makes an unexpected sudden struggle.

¹ Stopped gain in weight when making feathers rapidly.

² Too lively to handle.

³ Making some feathers and no gain, even a loss in weight.

⁴ Flew or rather flopped out of nest, a skinny, miserable specimen.

PLATE IX, FIG. 1. HOUSE TRAP. For description see 'Instructions for Bird Banding' by Frederick C. Lincoln, U. S. Department of Agriculture Circular 170, page 10. Notice the vestibule in the near right corner of the trap; the single outer door standing ajar; then the double inner doors standing ajar; birds will follow the food trail through into the trap; a small proportion of them will learn the way out.

An excellent trap, taking not only small birds, but also the birds too large for the government sparrow trap.

PLATE IX, FIGURE 2. NET OR DROP TRAP. This is a net of string; but wire netting can be used on the same frame; light wood frame 4" high; inch knobs on corners to prevent dropping tight to the ground in case a bird is caught by the frame. Notice door frame, and drop door, to drive the birds into the gathering box, which is also here shown. The net is dropped when the birds gather under it, by pulling the string, so as to jerk away the stick which props it up.

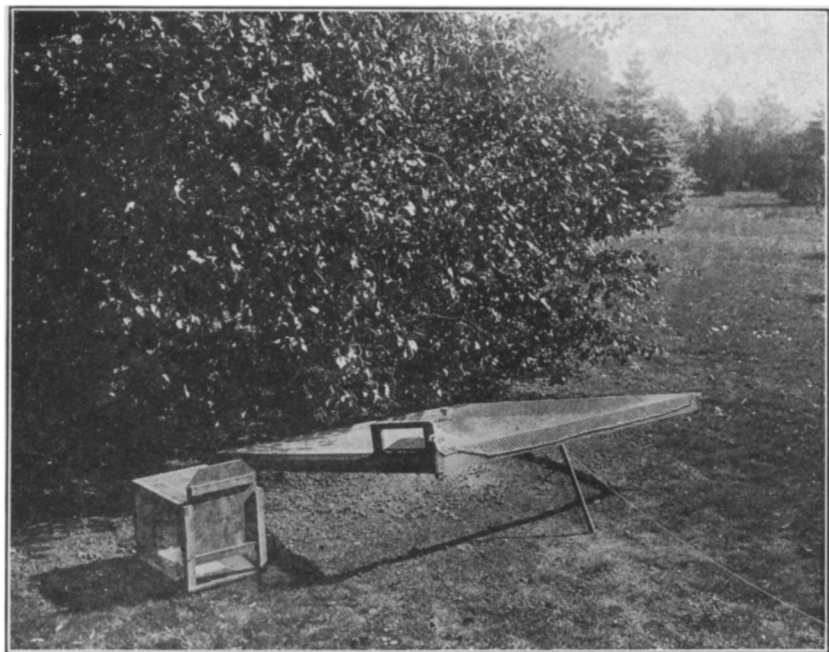
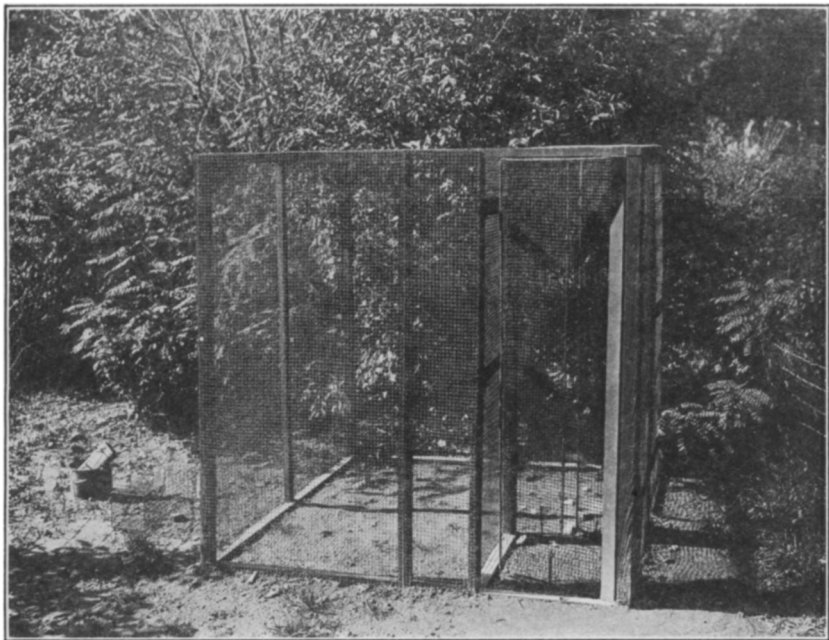
Williamson Building Cleveland, Ohio.

SOME BIRD NOTES FROM INDIAN BAY, MAN.

BY WILLIAM ROWAN.

THE following is a list of birds observed and collected at Indian Bay, Shoal Lake, Lake of the Woods, Man., by my wife and myself, with the Biological Station of the University of Manitoba as headquarters, during the period from June 15 to August 4, 1920. Indian Bay is in Manitoba, the Ontario boundary line running north and south a little way out in the bay and indicated on some of the islands. With the exception of some specimens secured at High Lake, (in Ontario), all were collected in Manitoba. The trip to this lake, as also the one to Falcon Lake, was undertaken primarily to study the avifauna of the huge sheet of muskeg lying between these sheets of water and the Biological Station. The Snake and the Falcon Rivers were the respective water courses followed on these two outings.

The Biological Station, founded this year (1920), is admirably situated for all kinds of field work. There are a number of distinct types of habitat in the immediate neighborhood, three of which are outstanding:—1. The Bay itself; 2. The forest encircling the Bay; 3. The muskeg beyond the forest and stretching forty miles or more to the north and west. Ornithologically the forest was the most fruitful.



PHOTOGRAPHS FROM S. PRENTISS BALDWIN.

1. HOUSE TRAP.

2. NET OR DROP TRAP.